WHAT WE CLAIMED IS:

1. An image output control system comprising an image processing device that makes image data subjected to a preset series of image processing and an image output device that creates dots according to a result of the preset series of image processing to output an image,

said image processing device comprising:

a pixel group setting module that collects a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

a dot number specification module that causes image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifies number of dots to be created in each pixel group according to the representative image data; and

a number data output module that outputs dot number data representing the specified number of dots with regard to each pixel group to said image output device,

said image output device comprising:

a number data receiving module that receives the output dot number data with regard to each pixel group;

a priority order specification module that specifies a priority order of pixels for dot formation in each pixel group;

a pixel position determination module that determines position of each dot-on pixel included in each pixel group, based on the received dot number data and the specified priority order; and

a dot formation module that actually creates a dot at the determined position of each dot-on pixel.

2. An image output control system in accordance with claim 1, wherein said image processing device further comprises:

a pixel number increase module that processes each original pixel of the image to generate multiple pixels having identical image data with image data of the original pixel, so as to increase a total number of pixels in the image,

wherein said pixel group setting module collects the multiple pixels generated from an identical original pixel to one pixel group.

3. An image output control system in accordance with claim 1, wherein said priority order specification module selects one priority order for each pixel group, among multiple priority orders prepared in advance.

4. An image output control system in accordance with claim 1, wherein said dot number specification module comprises:

a mapping storage module that stores multiple mappings for conversion of the representative image data of each pixel group into the number of dots to be created in the pixel group; and

a mapping selection module that selects one mapping for each pixel group among the stored multiple mappings,

said dot number specification module specifying the number of dots to be created in each pixel group, based on the representative image data of the pixel group and the selected mapping.

5. An image output control system in accordance with claim 4, wherein said mapping storage module stores multiple threshold value sequences, each consisting of plural threshold values corresponding to the predetermined number of plural pixels included in each pixel group, as the multiple mappings,

said mapping selection module selects one threshold value sequence among the stored multiple threshold value sequences, and

said dot number specification module sets number of smaller threshold values in the selected threshold value sequence that are smaller than the image data of each pixel group, to the number of dots to be created in the pixel group.

6. An image output control system in accordance with claim 5, wherein said mapping storage module stores the plural threshold values of each threshold value sequence together with information on an order of magnitude of the respective threshold values in the threshold value sequence, and

said dot number specification module refers to the order of magnitude and compares the image data of each pixel group with the plural threshold values of the selected threshold value sequence, so as to specify the number of dots to be created in the pixel group.

7. An image output control system in accordance with claim 6, wherein said mapping storage module stores the plural threshold values of each threshold value sequence arranged in the order of magnitude as storage of the information on the order of magnitude.

8. An image output control system in accordance with either one of claims 6 and 7, wherein when the image data of one pixel group is greater than a preset first threshold value, said dot number specification module performs comparison with the image data of the pixel group in a descending order of the plural threshold values of the selected threshold value sequence, so as to specify the number of dots to be created in the pixel group.

9. An image output control system in accordance with either one of claims 6 and 7, wherein when the image data of one pixel group is smaller than a preset second threshold value, said dot number specification module performs comparison with the image data of the pixel group in an ascending order of the plural threshold values of the selected threshold value sequence, so as to specify the number of dots to be created in the pixel group.

10. An image output control system in accordance with claim 6, wherein

said dot number specification module start comparison between the image data of each pixel group and the plural threshold values of the selected threshold value sequence from a threshold value having a selected ordinal number corresponding to a most recently specified dot number, so as to specify the number of dots to be created in the pixel group.

11. An image output control system in accordance with claim 5, wherein said mapping storage module stores a simplified dither matrix that includes the multiple threshold value sequences arranged in a preset two-dimensional array, as the multiple mappings,

said mapping selection module selects one threshold value sequence corresponding to a position of each pixel group in the image, among the multiple threshold value sequences stored in the simplified dither matrix, and

said dot number specification module specifies the number of dots to be created in each pixel group, based on comparison between the image data of the plural pixels included in the pixel group and the corresponding plural threshold values of the selected threshold value sequence.

12. An image output control system in accordance with claim 11, wherein said priority order specification module comprises:

a priority order storage module that stores a priority order matrix including the multiple priority orders of pixels for dot formation in each pixel group in a preset two-dimensional array, and

the simplified dither matrix and the priority order matrix have an identical number of rows and an identical number of columns expressed by the number of pixels.

13. An image output control system in accordance with claim 11, wherein said mapping storage module stores the simplified dither matrix that is generated by dividing a dither matrix, which maps threshold values to

respective pixels arranged in a two-dimensional array, into multiple groups corresponding to multiple pixel groups and includes the multiple threshold value sequences arranged corresponding to the multiple groups, and

said priority order specification module comprises:

a priority order storage module that stores a priority order matrix that is generated by dividing the dither matrix into the multiple groups corresponding to the multiple pixel groups and includes the multiple priority orders arranged corresponding to the multiple groups, where the priority order is specified with regard to each pixel group based on a magnitude order of respective threshold values included in a corresponding group; and

a priority order selection module that selects one priority order corresponding to a position of each pixel group in the image, among the multiple priority orders stored in the priority order matrix.

14. An image output control system in accordance with claim 1, wherein said dot number specification module comprises:

a dither matrix storage module that stores a dither matrix, which maps threshold values to respective pixels arranged in a two-dimensional array,

said dot number specification module compares the representative image data of each pixel group with a threshold value stored at a corresponding position in the dither matrix, so as to specify the number of dots to be created in the pixel group,

said priority order specification module selects a set of plural threshold values stored at positions in the dither matrix corresponding to respective pixels of each pixel group as the priority order specified for the pixel group, and

said pixel position determination module determines the position of each dot-on pixel, based on the dot number data and the selected set of plural threshold values.

15. An image processing device that causes input image data

representing an image to go through a preset series of image processing and thereby generates control data, which is used for control of dot formation by an image output device that creates dots and outputs a resulting processed image, said image processing device comprising:

a pixel group setting module that collects a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

a dot number specification module that causes image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifies number of dots to be created in each pixel group according to the representative image data; and

a number data output module that outputs dot number data representing the specified number of dots with regard to each pixel group as the control data to said image output device.

16. An image processing device in accordance with claim 15, said image processing device further comprising:

a pixel number increase module that processes each original pixel of the image to generate multiple pixels having identical image data with image data of the original pixel, so as to increase a total number of pixels in the image,

wherein said pixel group setting module collects the multiple pixels generated from an identical original pixel to one pixel group.

17. An image processing device in accordance with claim 15, wherein said dot number specification module comprises:

a mapping storage module that stores multiple mappings for conversion of the representative image data of each pixel group into the number of dots to be created in the pixel group; and

a mapping selection module that selects one mapping for each pixel group among the stored multiple mappings,

said dot number specification module specifying the number of dots to be created in each pixel group, based on the representative image data of the pixel group and the selected mapping.

18. An image output control method that makes image data subjected to a preset series of image processing and creates dots according to a result of the preset series of image processing to output an image,

said image output control method comprising:

a first step of collecting a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

a second step of causing image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifying number of dots to be created in each pixel group according to the representative image data;

a third step of specifying a priority order of pixels for dot formation in each pixel group;

a fourth step of determining position of each dot-on pixel included in each pixel group, based on the specified number of dots and the specified priority order; and

a fifth step of actually creating a dot at the determined position of each dot-on pixel.

19. An image output control method in accordance with claim 18, wherein said first step comprises the step of:

processing each original pixel of the image to generate multiple pixels having identical image data with image data of the original pixel, so as to increase a total number of pixels in the image.

20. An image output control method in accordance with claim 18, wherein said second step comprises the steps of:

storing multiple mappings for conversion of the representative image data of each pixel group into the number of dots to be created in the pixel group; and

selecting one mapping for each pixel group among the stored multiple mappings,

said second step specifying the number of dots to be created in each pixel group, based on the representative image data of the pixel group and the selected mapping.

21. An image processing method that causes input image data representing an image to go through a preset series of image processing and thereby generates control data, which is used for control of dot formation by an image output device that creates dots and outputs a resulting processed image, said image processing method comprising the steps of:

(A) collecting a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

(B) causing image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifying number of dots to be created in each pixel group according to the representative image data; and

(C) outputting dot number data representing the specified number of dots with regard to each pixel group as the control data to said image output device.

22. An image processing method in accordance with claim 21, wherein said step (A) comprises the steps of:

processing each original pixel of the image to generate multiple pixels having identical image data with image data of the original pixel, so as to increase a total number of pixels in the image; and

collecting the multiple pixels generated from an identical original pixel

to one pixel group.

23. An image output control program that is executed by a computer to make image data subjected to a preset series of image processing, create dots according to a result of the preset series of image processing, and thereby output an image,

said image output control program causing the computer to attain:

a first function of collecting a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

a second function of causing image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifying number of dots to be created in each pixel group according to the representative image data;

a third function of specifying a priority order of pixels for dot formation in each pixel group;

a fourth function of determining position of each dot-on pixel included in each pixel group, based on the specified number of dots and the specified priority order; and

a fifth function of actually creating a dot at the determined position of each dot-on pixel.

24. An image output control program in accordance with claim 23, wherein said first function comprises the function of:

processing each original pixel of the image to generate multiple pixels having identical image data with image data of the original pixel, so as to increase a total number of pixels in the image.

25. An image output control program in accordance with claim 23, wherein said second function comprises the functions of:

storing multiple mappings for conversion of the representative image

data of each pixel group into the number of dots to be created in the pixel group; and

selecting one mapping for each pixel group among the stored multiple mappings,

said second function specifying the number of dots to be created in each pixel group, based on the representative image data of the pixel group and the selected mapping.

26. An image processing program that is executed by a computer to make image data of an image subjected to a preset series of image processing and thereby generate control data, which is used for control of dot formation by an image output device that creates dots and outputs a resulting processed image, said image processing program causing the computer to attain the functions of:

(A) collecting a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

(B) causing image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifying number of dots to be created in each pixel group according to the representative image data; and

(C) outputting dot number data representing the specified number of dots with regard to each pixel group as the control data to said image output device.

27. An image processing program in accordance with claim 26, wherein said function (A) comprises the functions of:

processing each original pixel of the image to generate multiple pixels having identical image data with image data of the original pixel, so as to increase a total number of pixels in the image; and

collecting the multiple pixels generated from an identical original pixel

to one pixel group.

28. An image output control system comprising an image processing device that makes image data subjected to a preset series of image processing and an image output device that creates dots according to a result of the preset series of image processing to output an image,

said image processing device comprising:

a generator that collects a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

a number specification unit that causes image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifies number of dots to be created in each pixel group according to the representative image data; and

a data transmitter that outputs dot number data representing the specified number of dots with regard to each pixel group to said image output device,

said image output device comprising:

a data receiver that receives the output dot number data with regard to each pixel group;

a selector that selects a priority order of pixels for dot formation in each pixel group;

an operator that determines position of each dot-on pixel included in each pixel group, based on the received dot number data and the selected priority order; and

a dot formation unit that actually creates a dot at the determined position of each dot-on pixel.

29. An image processing device that causes input image data representing an image to go through a preset series of image processing and

thereby generates control data, which is used for control of dot formation by an image output device that creates dots and outputs a resulting processed image, said image processing device comprising:

a generator that collects a predetermined number of plural pixels, among a large number of pixels constituting the image, to each pixel group;

a number specification unit that causes image data of respective pixels in each pixel group to be represented uniformly by preset representative image data and specifies number of dots to be created in each pixel group according to the representative image data; and

a data transmitter that outputs dot number data representing the specified number of dots with regard to each pixel group as the control data to said image output device.